PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

| Applicant's or agent's file reference 28917/WO/1 | FOR FURTHER ACTION | See Form PCT/IPEA/416 | | | |
|--|--|--|--|--|--|
| International application No. | International filing date (day/month/year) | Priority date (day/month/year) | | | |
| PCT/EP2004/006883 | 25.06.2004 | 02.07.2003 | | | |
| International Patent Classification (IPC) or national | I onal classification and IPC | | | | |
| | B21D26/02, F15D1/ | 04 | | | |
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| Applicant | | | | | |
| DAIMLERCHRYSLER AG | | | | | |
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| This report is the international prelin under Article 35 and transmitted to the | | this International Preliminary Examining Authority | | | |
| 2. This REPORT consists of a total of | 7 sheets, incl | uding this cover sheet. | | | |
| 3. This report is also accompanied by A | NNEXES, comprising: | | | | |
| a. (sent to the applicant and | to the International Bureau) a total of | sheets, as follows: | | | |
| sheets of the descrip | otion, claims and/or drawings which have b | een amended and are the basis for this report and/or | | | |
| sheets containing red Instructions). | sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative | | | | |
| | sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental | | | | |
| Box. | | | | | |
| b. (sent to the International | Bureau only) a total of (indicate type and no | umber of electronic carrier(s)) | | | |
| , containing a sequence listing and/or tables | | | | | |
| related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions). | | | | | |
| 4. This report contains indications relati | ng to the following items: | | | | |
| Box No. I Basis of the | report | | | | |
| Box No. II Priority | - | | | | |
| | shment of opinion with regard to novelty, in | nventive step and industrial applicability | | | |
| | ty of invention | TE ETT. | | | |
| | • | novelty, inventive step or industrial applicability; | | | |
| | d explanations supporting such statement | | | | |
| Box No. VI Certain doc | uments cited | | | | |
| Box No. VII Certain defe | ects in the international application | | | | |
| Box No. VIII Certain obs | ervations on the international application | | | | |
| Date of submission of the demand Date of completion of this report | | | | | |
| | | - | | | |
| Name and mailing address of the IPEA/EP | Authorized officer | | | | |
| | | | | | |
| | | | | | |
| Facsimile No. | Telephone No. | | | | |

Translation

International application No.

PCT/EP2004/006883

| Box | No. I | | Basis of the report | | |
|-----|-------------|-----------------------|--|---|--|
| 1. | | | o the language, this report is based on the internation ler this item. | nal application in the language in v | which it was filed, unless otherwise |
| | | This rewhich i | port is based on translations from the original languag s the language of a translation furnished for the purpo | ge into the following language oses of: | , ! |
| | | 一 | nternational search (Rule 12.3 and 23.1(b)) | | |
| | | $\overline{\Box}$ | ublication of the international application (Rule 12.4) | | |
| | W:+L | | nternational preliminary examination (Rule 55.2 and/otto the elements of the international application, this | | heets which have been furnished to the |
| 2. | recei | iving Off report): | fice in response to an invitation under Article 14 are | e referred to in this report as "or | iginally filed" and are not annexed to |
| ı | 닖 | the inte | ernational application as originally filed/furnished | | |
| | M | the des | cription: | | |
| | | pages | 1-7 | | as originally filed/furnished |
| | | pages* | | | |
| | | pages* | | received by this Authority on | |
| | \boxtimes | the cla | ims: | | |
| | | nos. | | | as originally filed/furnished |
| | | nos.* | | as amended (together | with any statement) under Article 19 |
| | | nos.* | 1-7 | received by this Authority on | 18.03.2005 with letter of 11.03.2005 |
| | | nos.* | | received by this Authority on | |
| | X | the dra | wings: | | |
| | _ | sheets | - | | as originally filed/furnished |
| ļ | | sheets | | | |
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| | П | | | | |
| | | a sequ | ence listing and/or any related table(s) - see Supplem | iental Box Relating to Sequence L | isung. |
| 3. | Ш | The ar | nendments have resulted in the cancellation of: | | |
| | | | the description, pages | | |
| | | \sqcup | the claims, nos. | | |
| | | \sqcup | the drawings, sheets/figs | | |
| | | \sqcup | the sequence listing (specify): | | |
| l | | | any table(s) related to sequence listing (specify): | | |
| 4. | | This r | eport has been established as if (some of) the amend ave been considered to go beyond the disclosure as fi | dments annexed to this report and iled, as indicated in the Supplement | l listed below had not been made, since ntal Box (Rule 70.2(c)). |
| | | | the description, pages | | |
| | | | the claims, nos. | | |
| | | | the drawings, sheets/figs | | |
| | | | the sequence listing (specify): | | |
| | | | any table(s) related to sequence listing (specify): | | |
| | 16:4 | | olies, some or all of those sheets may be marked "sut | | |

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| Box | No. V Reasoned statemer citations and expla | nt under Ar mations sur | ticle 35(2) with regard to novelty, inventive step or industrial applicability; porting such statement | - |
|-----|---|----------------------------|--|---------------|
| 1. | Statement | | | |
| | Novelty (N) | Claims | | YES |
| | | Claims | 1-7 | NO |
| | Inventive step (IS) | Claims | | YES |
| | | Claims | 1-7 | NO |
| | Industrial applicability (IA) | Claims | 1-7 | YES |
| | | Claims | | NO |
| | | | | |

- 2. Citations and explanations (Rule 70.7)
 - 1. PRODUCT (claim 1)
 - 1.1 The subject matter of the claim is unclear (PCT Article 6) because it is in part defined by the method of production. Apart from the fact that the diameter ratios between blank and finished pipe section belong to the **method** (see §3 below), the limits of the deformation and consequently also the cross-sectional shape in the finished pipe are unclear.

The claim is not limited to the case that the largest part of the enlargement takes place in the plane normal to the bending plane, which - according to the application - appears useful for avoiding buckling, yet includes, inter alia, the following maximum values:

- Case (a)

degree of enlargement in the bending plane
= 1;

degree of enlragement normal to the bending plane = 1.

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

The blank is not enlarged within the inside hydroforming tool.

Case (b)

degree of enlargement in the bending plane
= 0.9;

degree of enlargement normal to the bending plane = 1.

The blank is enlarged in the same way as in US-A-5 269 650 (D2).

- 1.2 Thus, the subject matter of the claim is not novel or at least not inventive (PCT Article 33(1), (2)) in relation to the prior art according to US-A-2 837 810 (D1) and US-A-5 269 650 (D2). D1 and D2 each disclose a pipe section with at least one arcuate region and two adjoining transition regions at each end, the arcuate region having a cross-sectional shape different from that of the transition regions, with approximately identical flow area: see D1, figures (the regions directly adjacent the curve can be considered as transition regions of the pipe) as well as D2, fig. 4-6 and column 2, lines 54-59.
 - 2. APPARATUS (claims 2-5)
 - 2.1 Remarks similar those concerning degree of enlargement in claim 1 also apply to claim 2.
 As claim 2 says nothing about essential parts of the apparatus such as the two feed rams (2, 3) with their particular shape and relation to the

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

diameter of the transition regions (which makes an enlargement of the transition regions possible) as per fig. 1 and 2, the apparatus also cannot be considered novel or inventive in relation to the prior art.

- 2.2 Dependent apparatus claims 3 to 6 all refer back to claim 2 and concern obvious embodiments of the apparatus for producing alternative shapes of pipe bend, which are known per se or do not demand any inventive activity on the part of a person skilled in the art to produce finished pipe according to the specific requirements for the field of application. In this respect see also the examples of pipe bends according to US-B-6 390 142 (D3) and US-A-5 054 819 (D4), which have to be produced with the appropriate apparatus.
- 2.3 The prior art as a whole shows that the use of different parameters with regard to crosssectional area and shape of pipe bends and corresponding apparatus does not demand an inventive step.
- 3. METHOD (claims 6 and 7)
- 3.1 Again, similar remarks as to clarity apply to the method. There is nothing to indicate a degree of enlargement in the transition regions that could be 1, just as in the arcuate region (A/C = 1 is not excluded).

Further, there is no mention of a degreee of

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| | 101/11/2004/00003 |
|-----------|---|
| Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| | enlargement perpendicular to the bending plane, |
| | which first appears in the subject matter of claim |
| ! | 7. |
| | |
| 3.2 | A method should clarify that both transition |
| | regions and bending region are enlarged (that is |
| | diameter ratios less than 1), the enlargement |
| | perpendicular to the bending plane being greater |
| | than in the bending plane. |
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| Box No. VIII | Certain observations on the international application |
|-------------------------------|---|
| The following the description | g observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by in, are made: |
| See | Box V. |
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